

## CLAIMS

What is claimed is:

1. A catheter apparatus for gaining access into the uterine cavity in order to perform minimally invasive surgery or diagnosis in a uterus and its associated fallopian tubes, the catheter apparatus comprising:  
  
a single-lumen tubular body; and  
  
an elongated balloon disposed distally on the single-lumen tubular body for insertion into a cervical canal of the uterus, the balloon sealed containing a fixed internal residual volume of fluid and having opposing portions which occlude both openings of the cervical canal when the fluid in the balloon is displaced to inflate the opposing balloon portions to prevent distal and proximal movement of the catheter independent of the length of the cervical canal.
2. The catheter apparatus according to claim 1, wherein the single-lumen tubular body is flexible.
3. The catheter apparatus according to claim 1, further comprising a fluid displacement sleeve slidably disposed over the single-lumen tubular body, the sleeve being moveable over the elongated balloon to displace the internal fluid from a proximal portion of the balloon to the opposing portions of the balloon which are adjacent the opposite openings of the cervical canal when the balloon is inserted therein, to inflate the opposing portions of the balloon.

4. The catheter apparatus according to claim 3, wherein the fluid displacement sleeve is semi-rigid.
5. The catheter apparatus according to claim 3, wherein the inflated portions of the balloon define a barbell-shape balloon structure when inflated in the cervical canal.
6. The catheter apparatus according to claim 1, wherein the balloon is made from an elastomeric material.
7. The catheter apparatus according to claim 1, wherein the single-lumen tubular body is made from a polyurethane material.
8. The catheter apparatus according to claim 1, further comprising a removable stylet for stiffening the single-lumen tubular body to facilitate insertion thereof in the cervical canal.
9. The catheter apparatus according to claim 1, further comprising a surgical instrument insertion adapter assembly disposed at a proximal end of the single-lumen tubular body.

10. A catheter apparatus for gaining access into the uterine cavity in order to perform minimally invasive surgery or diagnosis in a uterus and its associated fallopian tubes, the catheter apparatus comprising:

a single-lumen catheter;

an elongated balloon disposed distally on the single-lumen catheter for insertion into a cervical canal of the uterus, the balloon sealed containing a fixed internal residual volume of fluid;

a fluid displacement sleeve slidably disposed over the single-lumen catheter, the sleeve being moveable over the elongated balloon to displace the fluid from a proximal portion of the balloon to opposing portions of the balloon which are adjacent the opposite openings of the cervical canal when the balloon is inserted therein, to inflate the opposing portions of the balloon;

and

a surgical instrument insertion adapter assembly disposed at a proximal end of the single-lumen catheter.

11. The catheter apparatus according to claim 10, wherein the single-lumen catheter is flexible.

12. The catheter apparatus according to claim 10, further comprising a removable stylet for stiffening the single-lumen catheter to facilitate insertion thereof in the cervical canal.

13. The catheter apparatus according to claim 10, wherein the fluid displacement sleeve is semi-rigid.

14. The catheter apparatus according to claim 10, wherein the inflated portions of the balloon define a barbell-shape balloon structure when inflated in the cervical canal.

15. The catheter apparatus according to claim 10, wherein the surgical instrument insertion adapter assembly includes a compressible sealing element for creating a substantially fluid tight seal around a surgical instrument.

16. The catheter apparatus according to claim 15, wherein the surgical instrument insertion adapter assembly includes a port for introducing a contrast medium into the uterine cavity via the single-lumen catheter.

17. The catheter apparatus according to claim 10, wherein the surgical instrument insertion adapter assembly includes a port for introducing a contrast medium into the uterine cavity via the single-lumen catheter.

18. A catheter apparatus for gaining access into the uterine cavity in order to perform minimally invasive surgery and diagnosis in a uterus and its associated fallopian tubes, the catheter apparatus comprising:

a single-lumen catheter; and

a surgical instrument insertion adapter assembly disposed at a proximal end of the single-lumen catheter.

19. The catheter apparatus according to claim 18, wherein the surgical instrument insertion adapter assembly includes a compressible sealing element for creating a substantially fluid tight seal around a surgical instrument.

20. The catheter apparatus according to claim 18, wherein the surgical instrument insertion adapter assembly includes a port for introducing a contrast medium into the uterine cavity via the single-lumen catheter.